HIV Care Measured Over Multiple Time Periods Varies by Race and Ethnicity

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• No conflicts of interest to report
• All are employed by Kaiser Permanente (KP)
Background and Research Objectives

- Prior research has shown differences by race and ethnicity in HIV quality performance including:\(^1,^2,^3\)
  - Differences in viral suppression
  - Differences in retention in care
  - Differences in prescription ART
- Kaiser Permanente’s previous results using one year of data had performance above CDC’s results with 61% suppressed\(^4\)
- Additionally we have shown improvement over time (2010-2012)\(^5\)
- We now seek to determine if:
  1. There are differences by race or ethnicity in our population
  2. Such differences change over time

Kaiser Permanente

- Integrated care system covering nine states (CA, CO, GA, HI, MD, OR, VA, WA) plus District of Columbia
  - Over 10 million members
  - Over 22,000 HIV+ members in 2013

- This study applies only to Northern California, Southern California, and Mid-Atlantic regions
  - California, District of Columbia, Maryland, Virginia

- Comprehensive care including outpatient and inpatient medical care; all diagnostic services (including laboratory testing), all care services including medical care, pharmacy, surgery, obstetrical care

- Multidisciplinary HIV medical care teams in all regions, including HIV specialist, and (depending on clinic) nurse, clinical pharmacist, social worker/benefits coordinator, mental health worker

- Shared electronic health record used by all providers
Methods

• We created cascades for all HIV+ members for 2010, 2011, and 2012
  o ≥13 years old with ≥8 months membership in year
    • Membership requirement ensures enough follow-up to capture presence or absence of care
• Measurements
  o Linkage to care:
    • a visit/CD4 within 90 days of being identified HIV+ for newly diagnosed patients or newly enrolled in Kaiser Permanente
    • ≥1 medical visit in year for established patients
  o Retention in care:
    • ≥2 medical visits ≥60 days apart
  o Filled ART:
    • Filled ≥3 months of DHHS-defined combination ART
  o Viral suppression:
    • HIV RNA<200 copies/mL last measured in year

Note: As we cannot determine undiagnosed in our system, 100% diagnosed is assumed.
Methods (Continued)

Analysis

• **By Race and/or Ethnicity**
  - Cascades prepared for years 2010, 2011, 2012 and stratified by racial and ethnic groups
    - Categorized as White, Black, Latino, Asian/Pacific Islander or Other /Unknown
  - Cascades compared by year
    - Employed independent methodology
      - Results of later stages of cascade were independent upon success of earlier stage (i.e., could be prescribed ART without 2 visits/year)
• Differences assessed over time and by racial/ethnic subgroup
• Not all patients in all three years of reporting (new in 2011 or 2012, etc.)
  - 80% of 2010 still present in 2012 data
## Results: Demographics

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>13,557</td>
<td>14,253</td>
<td>14,871</td>
</tr>
<tr>
<td><strong>Percent Male</strong></td>
<td>86.8%</td>
<td>86.6%</td>
<td>87.0%</td>
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<tr>
<td><strong>Median Age (IQR)</strong></td>
<td>49 (42-56)</td>
<td>49 (43-57)</td>
<td>50 (43-57)</td>
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<tr>
<td><strong>Region:</strong></td>
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<tr>
<td><strong>Northern California</strong></td>
<td>5895</td>
<td>6200</td>
<td>6472</td>
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<tr>
<td><strong>Southern California</strong></td>
<td>6015</td>
<td>6302</td>
<td>6534</td>
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<tr>
<td><strong>Mid-Atlantic (MD, VA, DC)</strong></td>
<td>1647</td>
<td>1751</td>
<td>1865</td>
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<tr>
<td><strong>Racial or Ethnic Sub-Group:</strong></td>
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<tr>
<td><strong>White</strong></td>
<td>6216 (45.9%)</td>
<td>6441 (45.2%)</td>
<td>6784 (45.6%)</td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>3206 (23.6%)</td>
<td>3377 (23.7%)</td>
<td>3595 (24.2%)</td>
</tr>
<tr>
<td><strong>Latino</strong></td>
<td>2711 (20.0%)</td>
<td>2902 (20.4%)</td>
<td>3059 (20.6%)</td>
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<tr>
<td><strong>Asian/Pl</strong></td>
<td>650 (4.8%)</td>
<td>719 (5.0%)</td>
<td>715 (4.8%)</td>
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<tr>
<td><strong>Other/Unknown</strong></td>
<td>774 (5.7%)</td>
<td>814 (5.7%)</td>
<td>718 (4.8%)</td>
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</table>
# Results Stratified by Racial/Ethnic Group and by Year

<table>
<thead>
<tr>
<th></th>
<th>Diagnosed</th>
<th>Linked to Care</th>
<th>Retained in Care</th>
<th>Filled Combination ART ≥3 Months</th>
<th>HIV RNA &lt;200/mL at Last Measure in Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>13557</td>
<td>14253</td>
<td>14871</td>
<td>10674</td>
<td>11512</td>
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<tr>
<td><strong>Sub-Populations:</strong></td>
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<td><em>By Counts:</em></td>
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<tr>
<td>White</td>
<td>6216</td>
<td>6441</td>
<td>6784</td>
<td>5974</td>
<td>6272</td>
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<tr>
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<td>3377</td>
<td>3595</td>
<td>3109</td>
<td>3268</td>
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<td>Latino</td>
<td>2711</td>
<td>2902</td>
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<tr>
<td>Asian/Pacific Islander</td>
<td>650</td>
<td>719</td>
<td>715</td>
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<td>690</td>
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<tr>
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<td>774</td>
<td>814</td>
<td>718</td>
<td>635</td>
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<td><strong>By Percents:</strong></td>
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<tr>
<td>White</td>
<td>96.1</td>
<td>97.4</td>
<td>97.0</td>
<td>76.7</td>
<td>80.9</td>
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<tr>
<td>Black</td>
<td>97.0</td>
<td>96.8</td>
<td>96.9</td>
<td>81.7</td>
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<tr>
<td>Latino</td>
<td>97.1</td>
<td>98.0</td>
<td>97.6</td>
<td>84.7</td>
<td>86.4</td>
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<tr>
<td>Asian/Pacific Islander</td>
<td>95.4</td>
<td>96.0</td>
<td>96.2</td>
<td>76.8</td>
<td>78.0</td>
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<tr>
<td>Other/Unknown</td>
<td>82.0</td>
<td>78.0</td>
<td>88.7</td>
<td>63.8</td>
<td>60.9</td>
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HIV Care Cascade by Race/Ethnicity: Kaiser Permanente 2010-2012

Significant (p<0.05): *-for race/ethnicity as categorical variable or as sub-group compared to all other sub-groups; †-Latino compared with Black

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<td>Linked to Care</td>
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<tr>
<td>Retained in Care*</td>
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<tr>
<td>Filled ART ≥3 months*</td>
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<tr>
<td>RNA &lt;200/mL at Last Measure*</td>
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Legend:
- White
- Black
- Latino
- Asian/PI
- Other/Unknown
Discussion

• Generally, performance by all populations for all metrics was high compared to national data, possibly due to:
  o Multidisciplinary care teams
  o Electronic health record shared by all care team members
  o Continual quality measurement/quality improvement
  o High medication adherence rates (ex., 2012: 66% >90% adherence)

• Linkage to Care
  o High performance for all groups, all years
  o Except for Other/Unknown, race/ethnicity groups were very similar to each other in all years

• Retention in Care
  o Steady performance over time, but varied by racial/ethnic group
  o Latinos had significantly better retention than Whites or Black for all years
  o While Blacks and Whites were similar to each other
Discussion (Continued)

• **Prescription of ART**
  - General improvement over time for all groups
  - Whites had statistically higher % for all years compared with all other racial/ethnic groups
  - Latinos had statistically greater % prescription ART than Blacks for all years

• **Viral Suppression**
  - General improvement over time for all groups
  - Whites had higher % compared with all other racial/ethnic group for all years
  - Latinos statistically higher % than Blacks for all years
  - If compare among those prescribed ART **ONLY**, no statistical difference among racial/ethnic groups (data not shown)
Limitations and Strengths

- **Strengths:**
  - Closed care system with comprehensive data capture
  - Longitudinal comparisons
  - Ability to stratify and analyze by demographic differences

- **Limitations:**
  - Number of members with undiagnosed HIV infection is unknown.
  - 5% with undocumented race/ethnicity data, but percent is small
  - Lag time in data – we are working on this
Conclusions

• In all sub-populations, outcomes continue to improve over time

• Success varies, sometimes significantly, by race and/or ethnicity
  o Even in an integrated care system with equal access to care

• Largest differences are in uptake (prescription fills) of ART
  o Leading to differences in viral suppression percents

• While linkage and retention may be even better among Latinos, these improvements did not translate into increased use of ART or viral suppression

• **Implications of results:** Stratified cascades can help identify sub-populations requiring more targeted outreach.
  o Programs targeting specific racial and ethnic HIV+ sub-populations are warranted
Thank You!

...and Acknowledgments

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  o Carol Remmers, PhD

• Project Coordinator
  o Courtney Ellis, BA

• Project Assistance
  o Alisha Moreno, BA

• All HIV Kaiser Permanente Multidisciplinary Care Teams
• Our patients and providers!